UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/805,354	03/13/2001	M. Amin Arnaout	00786-536001

CONFIRMATION NO. 1935

FORMALITIES LETTER

OC000000007771246

ANITA L. MEIKLEJOHN, PH.D.
Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804

Date Mailed: 04/03/2002

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant is given **TWO MONTHS FROM THE DATE OF THIS NOTICE** within which to file the items indicated below to avoid abandonment. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998). If the effective filing date is on or after September 8, 2000, see the final rulemaking notice published in the Federal Register at 65 FR 54604 (September 8, 2000) and 1238 OG 145 (September 19, 2000). Applicant must provide an initial computer readable form (CRF) copy of the "Sequence Listing", an initial paper or compact disc copy of the "Sequence Listing", as well as an amendment directing its entry into the application. Applicant must also provide a statement that the content of the sequence listing information recorded in computer readable form is identical to the written (on paper or compact disc) sequence listing and, where applicable, includes no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b), or 1.825(d). If applicant desires the sequence listing in the instant application to be identical with that of another application on file in the U.S. Patent and Trademark Office, such request in accordance with 37 CFR 1.821(e) may be submitted in lieu of a new CRF.

For questions regarding compliance to these requirements, please contact:

- **For Rules Interpretation, call (703) 308-4216**
- **To Purchase PatentIn Software, call (703) 306-2600**
- **For PatentIn Software Program Help, call (703) 306-4119 or e-mail at patin21help@uspto.gov or patin3help@uspto.gov**

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202
PART 2 - COPY TO BE RETURNED WITH RESPONSE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : M. Amin Arnaout et al. Art Unit :
Serial No. : 09/805,354 Examiner :
Filed : March 13, 2001
Title : HIGH AFFINITY INTEGRIN POLYPEPTIDES AND USES THEREOF

Commissioner for Patents
Washington, D.C. 20231

RESPONSE TO NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE AND/OR AMINO ACID SEQUENCES

In response to the communication dated April 3, 2002 (copy enclosed), applicant submits herewith a Sequence Listing in computer readable form as required by 37 CFR §1.824. In addition, applicant submits an initial Sequence Listing as required under 37 CFR §1.823(a) and a statement under 37 CFR §1.821(f).

Applicant respectfully requests entry of the paper copy and computer readable copy of the Sequence Listing filed herewith for the instant application. Furthermore, applicant requests entry of the following amendments.

In the specification:

Insert the paper copy of the Sequence Listing filed herewith following the Oath/Declaration.

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1 8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the U S Patent and Trademark Office, P O. Box 2327, Arlington, VA 22202

May 30, 2002
Date of Deposit

Carrie A. Amonte
Signature

Carrie A. Amonte
Typed or Printed Name of Person Signing Certificate

Replace the paragraph beginning at page 7, line 11, with the following rewritten paragraph:

Figure 5 depicts an alignment of the A domains of nine alpha integrin α subunit (CD11b (SEQ ID NO:1), CD11c (SEQ ID NO:2), CD11d (SEQ ID NO:3), CD11a (SEQ ID NO:4), alpha 1 (SEQ ID NO:5), alpha 2 (SEQ ID NO:6), alpha 10 (SEQ ID NO:7), alpha 11 (SEQ ID NO:8), and alpha E (SEQ ID NO:9)). In this alignment, the invariant Ile (I316) is indicated by an arrow.

Replace the paragraph beginning at page 7, line 17, with the following rewritten paragraph:

Figure 7 is an alignment of the A-like domains of eight integrin β subunits β3 (SEQ ID NO:10), β5 (SEQ ID NO:11), β6 (SEQ ID NO:12), β1 (SEQ ID NO:13), β2 (SEQ ID NO:14), β7 (SEQ ID NO:15), β8 (SEQ ID NO:16), and β9 (SEQ ID NO:17). In this alignment, the residue corresponding to the invariant Ile in β subunits is indicated by an arrow.

Replace the paragraph beginning at page 8, line3, with the following rewritten paragraph:

The variant polypeptides were created using standard recombinant techniques. Restriction and modification enzymes were purchased from New England Biolabs, Inc. (Beverly, MA), Boehringer Mannheim (Germany), or GIBCO BRL (Gaithersburd, MD). Site-directed mutagenesis was carried out in pGEX-4T-1 vector as described (Rieu et al. 1996 *J Biol Chem* 271:15858). The following mutagenic primers were used. IFAdel Fwd: 5'-TATAGGATCCGAGGCCCTCCGAGGGAGTCCTCAAGAGGATAG-3' (SEQ ID NO:18); Reverse: 5'-CTACTCGAGTTACTTCTCCCGAAGCTGGTTCTGAATGGTC-3' (SEQ ID NO:19); I-G reverse: 5'- CTACTCGAGTTAACCCTCGATCGCAAAGCCCTTCTC-3' (SEQ ID NO:20). Introduction of the respective mutation was confirmed by direct DNA sequencing. The PvuI-BspEI-restricted cDNA fragment of the A-domain containing the mutation was subcloned into the PvuI-BspEI-restricted CD11b cDNA, cloned into pcDNA3 plasmid, which containing full-length human CD11b (Rieu et al. 1996 *J Biol Chem* 271:15858). 11b $A^{123-321}$ and 11b$A^{123-315}$ and 11b$A^{I\rightarrow G}$ A-domains were expressed as GST fusion proteins in *Escherichia coli*

(Michishita et al. 1993 Cell 72:857), cleaved with thrombin and purified as described Li et al. 1999 *J. Cell Biol* 143:1523. C^{129} was replaced by S in all the expressed GST-A-domain fusion form to prevent formation of disulfide-linked dimmers in solution after thrombin cleavage (not shown). Purity was confirmed by SDS-PAGE analysis.

REMARKS

Applicant hereby submits that the enclosures fulfill the requirements under 37 C.F.R. §1.821-1.825. The amendments in the specification merely insert the paper copy of the Sequence Listing and sequence identifiers in the specification. No new matter has been added.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment.

Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 30 MAY 2002

Anita L. Meiklejohn, Ph.D.
Reg. No. 35,283

Fish & Richardson P.C.
225 Franklin Street
Boston, Massachusetts 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

"Version With Markings to Show Changes Made"

In the specification:

Paragraph beginning at page 7, line 11, has been amended as follows:

Figure 5 depicts an alignment of the A domains of nine alpha integrin α subunit (CD11b (SEQ ID NO:1), CD11c (SEQ ID NO:2), CD11d (SEQ ID NO:3), CD11a (SEQ ID NO:4), alpha 1 (SEQ ID NO:5), alpha 2 (SEQ ID NO:6), alpha 10 (SEQ ID NO:7), alpha 11 (SEQ ID NO:8), and alpha E (SEQ ID NO:9)). In this alignment, the invariant Ile (I316) is indicated by an arrow.

Paragraph beginning at page 7, line 17, has been amened as follows:

Figure 7 is an alignment of the A-like domains of eight integrin β subunits β3 (SEQ ID NO:10), β5 (SEQ ID NO:11), β6 (SEQ ID NO:12), β1 (SEQ ID NO:13), β2 (SEQ ID NO:14), β7 (SEQ ID NO:15), β8 (SEQ ID NO:16), and β9 (SEQ ID NO:17). In this alignment, the residue corresponding to the invariant Ile in β subunits is indicated by an arrow.

Paragraph beginning at page 8, line3, has been amended as follows:

The variant polypeptides were created using standard recombinant techniques. Restriction and modification enzymes were purchased from New England Biolabs, Inc. (Beverly, MA), Boehringer Mannheim (Germany), or GIBCO BRL (Gaithersburd, MD). Site-directed mutagenesis was carried out in pGEX-4T-1 vector as described (Rieu et al. 1996 *J Biol Chem* 271:15858). The following mutagenic primers were used. IFAdel Fwd: 5'-TATAGGATCCGAGGCCCTCCGAGGGAGTCCTCAAGAGGATAG-3' (SEQ ID NO:18); Reverse: 5'-CTACTCGAGTTACTTCTCCCGAAGCTGGTTCTGAATGGTC-3' (SEQ ID NO:19); I-G reverse: 5'- CTACTCGAGTTAACCCTCGATCGCAAAGCCCTTCTC-3' (SEQ ID NO:20). Introduction of the respective mutation was confirmed by direct DNA sequencing. The PvuI-BspEI-restricted cDNA fragment of the A-domain containing the mutation was subcloned into the PvuI-BspEI-restricted CD11b cDNA, cloned into pcDNA3 plasmid, which containing full-length human CD11b (Rieu et al. 1996 *J Biol Chem* 271:15858). 11b $A^{123-321}$ and

$11bA^{123-315}$ and $11bA^{1\rightarrow G}$ A-domains were expressed as GST fusion proteins in *Escherichia coli* (Michishita et al. 1993 Cell 72:857), cleaved with thrombin and purified as described Li et al. 1999 *J. Cell Biol* 143:1523. C^{129} was replaced by S in all the expressed GST-A-domain fusion form to prevent formation of disulfide-linked dimmers in solution after thrombin cleavage (not shown). Purity was confirmed by SDS-PAGE analysis.